

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An image display device, comprising:
 - a display unit ~~having a plurality of display pixels;~~
 - a resolution conversion device that ~~makes image data for a plurality of pixels~~ from converts original image data for ~~each a single pixel~~ and generates to resolution-converted image data including ~~the image data of the plurality of made~~ two adjacent pixels;
 - a viewing angle range adjustment device that sets grayscale values of ~~each the adjacent pixel pixels~~ of the resolution-converted image data ~~so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data;~~ and
 - a display device for displaying the resolution-converted image data on the display unit;

wherein in a case that a vertical observation direction to a surface of the display unit is a 0 degree observation direction, the viewing angle range adjustment device sets grayscale value of one of the ~~pixel adjacent pixels and the adjacent pixel~~ based on display characteristics of a -30 degrees observation direction and sets grayscale value of the other one of the ~~pixel adjacent pixels and the adjacent pixel~~ based on display characteristics of a +30 degrees observation direction; and

~~the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of displayed pixels;~~

~~the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels lower than the number of display pixels; and~~

after converting the resolution, the adjacent pixels have same grayscale values and the viewing angle range adjustment device sets grayscale values of the adjacent pixels of ~~the resolution-converted image data generated by the resolution conversion device~~ so that the grayscale values of the adjacent pixels are different from each other.

2. (Original) The image display device according to Claim 1, the viewing angle range adjustment device setting the difference between grayscale values of the adjacent pixels in the vertical direction to be more than a predetermined grayscale value.

3. (Canceled)

4. (Previously Presented) The image display device according to Claim 1, the viewing angle range adjustment device comprising:

a lookup table that stores the display characteristics of the display unit; and

a device that determines the grayscale value of each pixel with reference to the lookup table.

5. (Currently Amended) An image display device, comprising:

a display unit;

a resolution conversion device that ~~makes image data for a plurality of pixels from~~ converts original image data for a single each pixel and ~~generates to~~ resolution-converted image data including ~~the image data of the plurality of made pixels;~~

a viewing angle range adjustment device that sets grayscale values of ~~each the pixel-pixels~~ of the resolution-converted image data ~~generated by the resolution conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data;~~ and

a display device for displaying the resolution-converted image data on the display unit;

wherein the each pixel has sub pixels corresponding to a plurality of colors;

and

after ~~converting the resolution~~~~resolution conversion~~, the sub pixels have same grayscale values and the viewing angle range adjustment device ~~adjusts a viewing angle range for each color of the plurality of colors by setting~~sets the grayscale value of ~~each sub pixel~~pixels of one pixel so that the grayscale values of one of the sub pixels of the one pixel are to a different from grayscale value than the other sub pixels of the one pixel.

6. (Previously Presented) The image display device according to Claim 5, each sub pixel corresponding to each color of R, G, and B;

the viewing angle range adjustment device comprising:

a lookup table that stores display characteristics of the display unit for each color of R, G, and B; and

a device that determines the grayscale values of the sub pixels for each color with reference to the lookup table.

7. (Currently Amended) An image display device, comprising:

a display unit ~~having a plurality of display pixels~~;

a resolution conversion device that ~~makes image data for a plurality of pixels from~~converts original image data for ~~each a single pixel and generates to resolution-~~converted image data including the image data of the plurality of made two adjacent pixels;

a viewing angle range adjustment device that sets grayscale values of ~~each pixel~~the adjacent pixels of the resolution-converted image data ~~generated by the resolution conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data~~;

a display device for displaying the resolution-converted image data on the display unit; and

an input unit that ~~receives a command to select~~inputs one of a wide viewing angle range mode and a narrow viewing angle range mode, the display device displays the resolution-converted image data adjusted by the viewing angle range adjustment device if the

wide viewing angle range mode is selected and displays the resolution-converted image data not adjusted by the viewing angle range adjustment device if the narrow viewing angle range mode is selected;

~~the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of display pixels; and~~
after converting the resolution, the adjacent pixels have same grayscale values and the viewing angle range adjustment device sets grayscale values of the adjacent pixels so that the grayscale values of the adjacent pixels are different from each other.

~~the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels lower than the number of display pixels.~~

8. (Currently Amended) An image display method to be executed in an image display device with a display unit, comprising:

~~making image data for a plurality of pixels from~~converting original image data for each a single pixel and generating to resolution-converted image data including the image data of the plurality of made pixels;

~~setting grayscale values of each the pixel-pixels of the resolution-converted image data generated in the step of making image data so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data; and~~

displaying the resolution-converted image data on the display unit; wherein each pixel has sub pixels corresponding to a plurality of colors; and further comprising:

~~adjusting a viewing angle range for each color of the plurality of colors~~
by after the step of converting, the sub-pixels have the same grayscale values, and

~~_____~~ setting the grayscale value of ~~each sub pixel~~ pixels of one pixel so that the grayscale values of the sub pixels of the one pixel are to a different grayscale value than from the other sub pixels of the one pixel.

9. (Currently Amended) An image display program stored on a recordable medium to be executed in an image display device having a display unit and a computer, the image display program making the computer function as:

a resolution conversion device that ~~makes image data for a plurality of pixels from~~ converts original image data for ~~each a single pixel~~ and generates resolution-converted image data including the image data of ~~the plurality of made pixels~~;

a viewing angle range adjustment device that sets grayscale values of ~~each pixel~~ the pixels of the resolution-converted image data ~~generated by the resolution conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution converted image data are different~~; and

a display device for displaying the resolution-converted image on the display unit; wherein

each pixel has sub-pixels corresponding to a plurality of colors; and

after converting the resolution, ~~a resolution conversion~~, the sub pixels have the same grayscale values and the viewing angle range adjustment device ~~adjusts a viewing angle range for each color of the plurality of colors by setting~~ sets the grayscale value of ~~each sub pixel~~ pixels of one pixel so that the grayscale value of the sub pixels of the one pixel are to a different grayscale value than the from other sub pixels of the one pixel.

10. (Currently Amended) An image display method to be executed in an image display device with a display unit, ~~having a plurality of pixels~~, comprising:

~~making image data for a plurality of pixels from~~ converting original image data for ~~each a single pixel and generating~~ to resolution-converted image data including ~~the image data of the plurality of made~~ of two adjacent pixels;

setting grayscale values of ~~each the adjacent pixel~~pixels of the resolution-converted image data ~~generated in the step of making image data so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data;~~ and

displaying the resolution-converted image data on the display unit; wherein

in a case that a vertical observation direction to a surface of the display unit is a 0 degree observation direction, setting grayscale value of one of the adjacent pixel~~pixel~~ and ~~the adjacent pixel~~ based on display characteristics of a -30 degrees observation direction and setting grayscale value of the other one of the adjacent pixel and ~~the adjacent pixel~~pixels based on display characteristics of a +30 degrees observation direction; ~~and, after converting the resolution, the adjacent pixels have same grayscale values and the grayscale values of the adjacent pixels are set so that the grayscale values of the adjacent pixels are different from each other.~~

~~displaying the original image data on the display unit if the original image data has a number of pixels corresponding to a number of display pixels; and~~

~~making image data and setting grayscale values if the original image data has a number of pixels lower than the number of display pixels.~~

11. (Currently Amended) An image display program stored on a recordable medium to be executed in an image display device having a display unit ~~having a plurality of pixels~~ and a computer, the image display program making the computer function as:

a resolution-conversion device that ~~makes image data for a plurality of pixels from~~converts original image data for ~~each a single pixel and generates to~~ resolution-converted image data ~~including the image data of the plurality of made pixels; of two adjacent pixels;~~

a viewing angle range adjustment device that sets grayscale values of ~~each pixel~~the adjacent pixels of the resolution-converted image data ~~generated by the resolution~~

~~conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data; and~~

a display device for displaying the resolution-converted image data on the display unit; wherein

in a case that a vertical observation direction to a surface of the display unit is a 0 degree observation direction, the viewing angle range adjustment device sets grayscale value of one of the adjacent pixel-pixels and the ~~adjacent pixel~~-based on display characteristics of a -30 degrees observation direction and sets grayscale value of the other one of the adjacent pixel and the ~~adjacent pixel~~pixels based on display characteristics of a +30 degrees observation ~~direction;direction~~

after converting the resolution, the adjacent pixels have same grayscale values and the viewing angle range adjustment device sets grayscale values of the adjacent pixels so that the grayscale values of the adjacent pixels are different from each other.

~~the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of display pixels; and~~

~~the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels lower than the number of display pixels.~~